

B¹ amend
wherein said transducer elements and said control circuit are configured so as to achieve a combining at each transducer element of the frequency and phase components of the row and column control signals for that transducer element in such a manner as to provide a focused acoustic signal at a given focal distance and direction from said array.

29 (amended). An acoustic energy transmitting apparatus, comprising:

a plurality of electro-acoustic transducer elements arranged in an M row by N column array, where M and N are positive integers and at least one of M and N is greater than one;

M row control lines, each coupled to the transducer elements in one of said M rows;

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N column control lines, each coupled to the transducer elements in one of said N columns;

control circuit for propagating row and column control signals for each of said M rows and said N columns, a control signal for each transducer element being a combination of one of said row control signals and one of said column control signals;

a plurality of active devices, each coupled to one of said transducer elements for combining the row control signal and the column control signal of that transducer element;

wherein said transducer elements, control circuit and active devices are configured so as to achieve a combining at each transducer element of the row and column control signals for that transducer element in such a manner as to provide a focused acoustic signal at a given focal distance and direction from said array; and

wherein each of said electro-acoustic transducer elements is configured within said apparatus to function in a non-linear manner in operation.

30 (amended). An acoustic energy receiving apparatus, comprising:

a plurality of electro-acoustic transducer elements arranged in an M row by N column array;

control circuit for propagating row and column control signals for each of said M rows and said N columns, each row and column control signal having a frequency and a phase component; and

wherein said transducer elements and said control circuit are configured so as to achieve a combining at each transducer element of the frequency and a phase components of the row and column control signals for that transducer element with a resultant electrical receive signal corresponding to an acoustic signal incident on that transducer element; and

a filter that filters spurious frequencies output from the transducer elements;

wherein said transducer elements, control circuit and filter are configured to coherently combine the electrical receive signal of each of said transducer elements and to achieve focused acoustic signal reception at a given distance and direction from said array.

36 (amended). The apparatus of claim 30, further comprising a circuit that generates image data from the coherent combination of transducer element receive signals.

Please add the following new claim:

38 (new). An acoustic energy receiving apparatus, comprising:

a plurality of electro-acoustic transducer elements each capable of generating an electrical receive signal in response to an incident acoustic wave and arranged in an M row by N column array, where M and N are positive integers and at least one of M and N is greater than one;

control circuit for propagating row and column control signals for each of said M rows and said N columns, the control signal for each transducer element being a combination of the row and column control signals for that transducer element;

wherein said row and column control signals are configured, for each transducer element, such that when combined with the electrical receive signal of that transducer element the electrical receive signal is modified in such a manner as to permit the simultaneous processing of the modified electrical receive signals from said plurality of transducer elements;